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Naval Postgraduate School

Monterey, California

January 3, 1994

Computer and Information Services BULLETIN

Sun Unix Open House

The Computer Center has introduced Sun Sparc 10-41 Unix workstations as its basic computing platform. Students, faculty, and staff are invited to come by these open house sessions, being held in two locations, to learn more about them.

Friday, Jan. 7, 1300-1500, Ro-222
Friday, Jan. 14, 1000-1200, In-147

The January 7 open house will be a good opportunity to have a look at the Computer Center's newest Unix workstation open lab. Center staff will show how to:

- login to the mainframe
- login to other Unix platforms such as the local Cray Y-MP/EL98
- access help and manual pages
- move files between platforms through FTP
- upload files from an MS-DOS formatted disk with MTOOLS
- read and send e-mail
- navigate the Internet with gopher, Xmosaic, etc.
- run Matlab and the S-plus statistical package

If these times are inconvenient and you would like to learn more about the Center's Suns, contact Dennis Mar, In-133, ext. 2672, mainframe userid 2001P, or mar@nps.navy.mil

Dennis Mar

I N S I D E

Weak Passwords Lock Accounts

The Computer Center has been checking public workstation Unix passwords to be sure they are sufficiently difficult to break. Mail is sent to all individuals whose passwords can be easily cracked. This is vital to the security of the systems and network at the Naval Postgraduate School.

On January 24, 1994 **any public workstation Unix account whose password can be cracked will be locked.** After January 24, if you have trouble logging on to your Unix account, contact Jody Schivley, In-116, x3662, Ruth Roy, In-109, 2796, or Hiram Cooke, to choose a new password.

Passwords should combine mixed-case alphabetics with nonalphabetic characters (!@#$%^&*{|"<>).

Passwords which are not easily compromised are based upon non-dictionary words, hence any word which might appear in a dictionary, EVEN IF IT IS SUPPOSEDLY AN OBSCURE WORD is unsuitable. In other words, use only a word you have made up.

Similarly, any password which is derived from your name, department or other personal information is unsuitable because it can be easily guessed.

If you think your current password can be cracked, change it with the yppasswd command. For example:

```
yppasswd
Changing NIS password for jdoe on nps.navy.mil.
Old password:          you're asked for your old passwd
New password:          enter a new passwd
Retype new password:   retype to be sure you know it
NIS entry changed on nps.navy.mil
```

It is important that password security be maintained at a high level for the sake of ALL the people who use these computers. We thank you for your cooperation in this matter.

Jody Schivley jschiv@nps.navy.mil

Universal E-mail

The Center has established gateways connecting the many different computing environments on campus and in the outside world, interconnecting the popular mail systems such as WordPerfect Office (WPO) for users on PC-LANs (both Novell Netware and Banyan Vines), the Unix mail and the mainframe's Rice Mailer (the mail function available when you are BITLINKed). The common network exchange protocol is SMTP (Simple Mail Transfer Protocol) which is the means by which mail is sent over TCP/IP networks such as our campus backbone and the Internet.

Users can exchange mail between PCs and Macs on Vines and Neware, networked Unix workstations, the Amdahl mainframe, the Cray, and Internet. This is via the new WordPerfect Office to Simple Mail Transfer Protocol gateway (appropriately named *wposmtp*). Because of the popularity and wide availability of WordPerfect and WPOffice, we built on them as the strategic products for exchange of files other than simple text messages.

WP Office is now supported on DOS, DOS/Windows, Mac System 7, and Unix. WPO is already available to everyone who is on Netware and Vines networks. WPO for Unix (it supports a wide variety of terminals (e.g., ADM3, VT100, VT220, etc.) and GUIs (e.g., XWindows, OpenWindows)) will be provided to any Unix user who requires it for compatibility with their correspondents. However, we expect most Unix users will continue using Unix mail or their workstation's mail system if complete compatibility with WPO is not required. An advantage to using WPO is being able to use its address lookup feature; also, it has many other useful features.

Those using WPO on a Vines or Netware network, PC or Mac, can send mail to Unix machines with an address like the following:

```
wposmtp:"user@host.org"
```

Be sure to type both double quotes, and the colon, as shown. (This is simpler than a previous addressing system you may have heard of.)

Here are typical addresses that would go within the quotes:

mainframe:	`1234P@vm1.cc.nps.navy.mil`
campus Unix:	`consult@nps.navy.mil`
odd-campus:	`listserv@uhupvm1.uh.edu`

Here's an example address a PC or Mac user might use, to send mail to someone with an account on the Computer Center Suns:

```
wposmtp:"frazier@nps.navy.mil"
```

Going the other way, from either Unix, mainframe, or Internet to either Novell or Vines, use an address of the form

```
acntname@wposmtp.nps.navy.mil
```

where *acntname* is the WPO account name of the person you're sending to. (Or you can use the campus mailbox address they have set up with Jody Schivley, as described in the next paragraph.) Call them up and ask, if you don't know what their address is.

All are encouraged to contact Jody Schivley (In-110, x 3432, jschiv@nps.navy.mil) to set up a shorter nickname (what Unix calls a mail alias) that everyone, at NPS and elsewhere, can use to send mail to you. That way, you can tell everyone your address is (of the form) *jpjones@nps.navy.mil* and your mail will get to you, whether you've told Jody you want

to receive your mail on the mainframe, a Unix machine, or on a Vines or Netware Mac or PC.

Transferring Formatted Files

Files from Wordperfect, Quattro-Pro, Lotus, Excel, DBase, etc. are not like regular mail messages, and can't be imported into the text of a letter you're composing (which is sent in ASCII). They would be rendered unusable by the mail transfer process if you retrieved them into a mail mesasge. To send such a file, send it as an attachment.

Before sending such a file, however, consider this: the file will be worthless if the receiving machine doesn't have software to use it. For example, a WordPerfect file will be gibberish undier the Unix editor vi. (The public Suns do run Sun WordPerfect.) On the other hand, there are many graphics viewers on Unix that may be able to display a graphics file you might wish to send.

The wposmtp gateway uses the common Unix file encoding scheme UUENCODE to convert a binary file into an ASCII-encoded representation that can be sent using SMTP. The wposmtp gateway will automatically UUDECODE a UUENCODEd file upon receipt. Having received a UUENCODEd binary file on a Unix system, the file must be UUDECODEd to its binary state (see your local Unix support person, manual, or man page for additional information). Before sending a binary (non-ASCII) file from Unix to Vines or Netware, be sure to UUENCODE it.

Forwarding Mainframe Mail to PC, Mac, or Unix Workstation

Logon to the mainframe.
At the CMS prompt, type

```
vmsched
```

Choose option 1 (schedule).
Give some name for this request (any name is fine, but choose something you can remember, so that you can check on it later).
Give your mainframe password.
Give the time of day you want to begin forwarding your mail (must be after the current time).
Give the frequency for mail forwarding (perhaps every hour).
At "command to execute", type

```
exec fwdmail name@host.org
```

where *name@host.org* is an alias established with Jody Schivley at the Computer Center, as described earlier in this article.
Press PFkey 12 to execute this vmsched command.
Press PFkey 3 to exit vmsched.

Warning: Do not use the automatic reply function of WPO to reply to your forwarded mail. If you do, your reply will not get beyond the mainframe.

For further information re Banyan Vines, see René Lightcap ext 2195. For help with Novell Netware, see Chuck Taylor (In-103, ext 2696, works afternoons and evenings) or Donna Schoennecker (same office, works part time). For general assistance with topics presented in this article, see Larry Frazier (In-113, ext. 2671) or the following:

K. Strutynski kstrutynski@nps.navy.mil

Winter Quarter Talks

The Computer Center staff will give thirty-four talks during the Winter Quarter to acquaint users with the various facilities and services on the VM/CMS timesharing and MVS batch systems on the Amdahl mainframe, the Cray YMP EL, the Unix Suns, the Visualization Lab, and the Learning Resource Centers (campus microcomputer labs). In addition, Prof. P.A. W. Lewis (OR Dept.) will present two introductory talks about interactive statistical/graphical services using APL.

General-Interest Mainframe Talks

Signup is not required for the following four talks.

Introduction to VM/CMS

1010 Wednesday	5 January	Dennis Mar	In-119
1110 Tuesday	11 January	Dennis Mar	In-119

This talk is given twice. It assumes no prior knowledge of the Center's computer, and covers use of the 3278 and related terminals, how to logon and logoff, use of the function keys, online help files,

and various general-purpose commands. ***It is strongly recommended for all new users of the Center and covers information which may not be provided in an introductory programming class.*** Be sure to bring a copy of Technical Note VM-01, *User's Guide to VM/CMS at NPS*, generally provided when a new user registers at the One-Stop-Check-in or in In-147.

Introduction to XEDIT

1010 Thursday	6 January	Helen Davis	In-119
1110 Wednesday	12 January	Dennis Mar	In-119

This talk is presented twice. It provides elementary information about the XEDIT full screen editor. It covers methods for creating and changing programs and other files. Use of the PF keys and HELP facility in XEDIT are mentioned. The talk assumes little or no familiarity with XEDIT, but prior attendance at *Introduction to VM/CMS* is recommended.

To attend any of the following talks, you must sign up in the Consulting Office, In-146.

Microcomputer Talks

Introduction to SIMPC

1010 Friday	7 January	Chris Essert	In-122
1310 Tuesday	11 January	Chris Essert	In-260

This talk is presented twice. It provides elementary information about the installation and use of SIMPC on your home computer to obtain full screen capability and file transfer capability between your home PC and the Center's mainframe AMDAHL System running VM/ESA/CMS and MVS/ESA. Without SIM3278 (SIMPC) you may dial into the mainframe but in single line only mode (similar to an old teletype machine). The talk discusses hook up procedures, common problems encountered and their solutions. V6.1 of SIMPC will be distributed on 3½ inch disks. This talk requires no signup.

APL2/AGSS on Micros & Mainframe

1410 Monday 10 January Prof. P.A.W. Lewis GI-203

APL2 is a modern APL language and AGSS is a scientific and statistical graphics package written in APL2. The combination of this interactive, array oriented language and the extensive suite of functions and graphics available in AGSS (A Graphical Statistical System) makes for one of the most effective computing environments which is currently available. This talk will discuss the use of the package for topics like regression, time series analysis and reliability data analysis in the microcomputer and mainframe environments.

WordPerfect Thesis

1010 Thursday	13 January	Larry Frazier	In-119
0910 Wednesday	2 February	Larry Frazier	In-119
1110 Friday	25 February	Larry Frazier	In-119

This talk will be given three times; it shows how to produce a thesis in NPS-approved format using NPS Styles. The Style Sheets were developed at NPS to simplify the specific formatting requirements for theses. On-line and printed documentation in the form of a sample thesis will be provided; this and the style sheet can be copied for use with WordPerfect 5.1, 5.2, and 6.0 off site. Those attending this talk must be familiar with WordPerfect. The talk is open to anyone preparing a thesis at NPS including spouses.

Unix/Workstation Talks

Unix Fundamentals

Part 1

1110 Wednesday	5 January	Matthew Koebbeln-119
1110 Thursday	6 January	Matthew Koebbeln-119
0910 Monday	10 January	Matthew Koebbeln-119
1010 Tuesday	18 January	Matthew Koebbeln-119
1110 Friday	28 January	Matthew Koebbeln-119

Part 2

1110 Friday	7 January	Matthew Koebbeln-119
1010 Tuesday	11 January	Matthew Koebbeln-119
0910 Wednesday	12 January	Matthew Koebbeln-119
1010 Thursday	20 January	Matthew Koebbeln-119
1110 Monday	31 January	Matthew Koebbe

In-119This talk is presented five times in two 1 hr. sessions (part 1 and part 2) to acquaint users with the new UNIX workstations and the UNIX operating system. Signup is not required for this talk, but seating is limited to approximately 30 in In-119. The

talk assumes little or no familiarity with UNIX, and is open to faculty, students, NPS staff, staff of tenant activities, and spouses. This talk will cover the basics of the UNIX operating system. The hierarchal structure of the UNIX operating system will be discussed to show how commands may be derived from more 'basic' commands rather than from memorization. Emphasis is on the UNIX perspective to file system structure, disk usage, communication, and information retrieval. These sessions are open to faculty, staff and students. Sessions may be attended more than once.

Introduction to the Unix Operating System

1010 Monday	10 January	Larry Frazier	Sp-341
1110 Tuesday	18 January	Larry Frazier	Ro-222

Most Unix systems at NPS provide graphical user interfaces that make it easier to get your work done. However, it can be helpful to have a general understanding of Unix itself, and there are times when you may need to create, copy, and delete files, create directories, etc., without the benefit of the graphical front end. This talk introduces such elementary topics, and might be all the Unix needed to get started on a Unix workstation. The talk described above is more theory; this one is more nuts and bolts. There are twelve workstations available; the first twelve people signing up will have priority at the hands-on practice. Others will be able to watch and learn. Contact Larry Frazier, In-113, x2671, to have this talk given for other groups. Sign up in In-146 is required.

Introduction to the Unix Editor vi

1010 Tuesday	11 January	Chris Essert	Sp-341
1110 Wednesday	19 January	Chris Essert	Ro-222

Unix systems at NPS usually provide text editors that make it easier to get programs or data entered into the computer. The basic text editor that all Unix systems have is called 'vi' a full-screen interactive editor. This talk introduces the most common 'vi' commands that allow one to create new text, revise existing text, or append text to an existing file. There are twelve workstations available; the first twelve people signing up will have priority at the hands-on practice. Others will be able to watch and learn. Contact Chris Essert, In-133, x2672, to have this talk given for other groups. Sign up in In-146 is required.

Unix: Lesson 2

1010 Wednesday	12 January	Larry Frazier	Sp-341
1110 Thursday	20 January	Larry Frazier	Ro-222

This is lesson 2, building on the talk described just above the vi talk above; it covers Unix mail and other intermediate-level Unix commands. There are twelve workstations available; the first twelve people signing up will have priority at the hands-on practice. Others will be able to watch and learn. Contact Larry Frazier, In-113, x2671, to have this talk given for other groups. Sign up in In-146 is required.

Cray YMP EL User Workshop

1010 Tuesday	25 January	Mike McCann	Sp-341

This is a two-hour introduction to the hardware and software available on the Cray Y-MP EL98. This is a hands-on class where attendees will run programs on the Cray via interactive logins from the graphics workstations in the Lab. Topics to be covered include: (1) Setting up a script to access data, compile & run a program, and store the resulting data. (2) Use of the Network Queuing System (NQS) to submit batch jobs and commands to monitor job progress. (3) Optimization of code, especially the vectorization of inner loops. (4) Using performance analysis tools to identify inefficient code. ***Attendees should be familiar with Unix, vi, Fortran, and X-window concepts.*** Space is limited to about 12 people; reserve a spot by signing up in In-146. If you do not already have an account on the Cray then contact Ruth Roy at ext. 2796 or at roy@nps.navy.mil

Introduction to the Vis Lab

1410 Monday	24 January	Matthew Koebbe	In-148

This is a two hour introduction to the hardware and software available in the Vis Lab (In-148). The first hour will be an overview of the image processing and visualization packages in the lab, particularly Vis5d (which allows interactive display of

multi-dimensional gridded data), including how to get your data into Vis5d format. The presentation will assume a working knowledge of Unix (other Unix talks are announced above). The second hour will be devoted to hands-on use of the tools, including the video recording hardware. Space is limited; reserve a spot by signing up in In-146.

Introduction to Shell Scripts

1010 Wednesday 26 January Mike McCann In-119

As users, much of our interaction with the Unix operating system is via a special program called the shell. The shell interprets commands that we enter at a prompt and takes appropriate action. The shell understands several programming constructs such as loops and conditional tests. It is often more efficient to undertake a short programming task with a shell script that uses existing and well tested Unix commands than to write a program in a language such as C or Fortran.

There are two shells in general use: the C Shell (/bin/csh) and the Bourne Shell (/bin/sh). The former is the default interactive shell for most users on most Unix systems. The latter is commonly used for complex programming tasks.

This talk will cover the primary programming constructs used in both shells with the objective of making your work more productive. You may reserve a spot by signing up in In-146.

COLOR Hard Copy

1110 Thursday 27 January Mike McCann In-119

There usually comes a time (when presenting your thesis work or giving a paper) when the graphics you create on a computer screen needs to be copied to some other presentation media. The other medium may be paper, transparency, or even video tape. Facilities now exist at the Computer Center for any computer user on campus to produce hard copy of still or animated images. This talk will present these capabilities and also provide a background of how these tools are used in the Vis Lab so that users can make the best use of them at the Center or on their own computer. You may reserve a spot by signing up in In-146.

Specialized Mainframe Talks

Introduction to E-Mail

1110 Thursday 13 January Dennis Mar GI-203

This talk provides basic information about electronic mail services available to mainframe users. General descriptions of BITNET and Internet (the two wide-area networks available to mainframe users), the software tools used on each network, and the format of electronic addresses are presented. A demonstration of sending and receiving e-mail is integral to the presentation.

Introduction to the Internet

0810 Thursday 03 February Helen Davis GI-318

This talk provides basic information on using the internet. Topics covered will be how to access and use the internet. Demonstrations will include how to transfer files from remote locations with FTP (file Transfer Protocol), and to look at information at remote locations with TELNET, and how to locate information on the internet with Archie and Gopher.

Introduction to Minitab

1010 Wednesday 19 January Dennis Mar In-119

Minitab is an interactive statistical computing system available on VM/CMS. It is designed for moderate-size data sets which can be stored on a CMS A-disk. Minitab is quick and especially useful for exploring data, plotting, and regression analysis. ***Attendees should be familiar with the VM/CMS timesharing system.***

APL2/AGSS on the Mainframe

1510 Thursday 13 January Prof. P.A.W. Lewis In-364E

APL2 is a modern APL language and AGSS is a scientific and statistical graphics package written in APL2. The combination of this interactive, array oriented language and the extensive suite of functions and graphics available in AGSS (A Graphical Statistical System) makes for one of the most effective computing environments which is currently

available. This talk will discuss the use of the package for topics like regression, time series analysis and reliability data analysis in the mainframe computing environment. On the mainframe, very large workspaces are available -- up to 999 megabytes!

Introduction to SAS

1110 Tuesday 18 January Dennis Mar In-119

SAS, the Statistical Analysis System, is a flexible program for handling all phases of data analysis: retrieval, data management, statistical analysis, and report writing. It has excellent features for merging and subsetting data sets. The speaker will describe the required data format and SAS control statements for a simple problem. Both the batch and timesharing modes of execution will be demonstrated.

Neil Harvey 1770p

Supercomputing

Cray Gets Automatic Tape Loading

As of 13 December 1993 all the data partitions (/d1, /d2, and /d3) are under automatic space management and data migration control. The Cray Data Migration Facility (DMF) essentially turns magnetic disk drives into cache spaces for files that may be stored on magnetic tape. A file may be local (cached) or migrated. Large files on the /d? partitions that have not been recently accessed will be automatically migrated to IBM 3480 magnetic tape in the Computer Center's StorageTek automated tape loading system.

When a file is migrated, the actual contents of the file are moved to tape, yet the directory entry and a pointer to the contents on tape remain. In a long listing (the 'ls -l' command) of a directory containing migrated files, they will have an 'm' in the left-most position (where the 'd' is if a file is a directory).

A request for access to one of these files (e.g. a Fortran OPEN or Unicos assign(1)) will cause the file to be automatically recalled to disk. The recall usually takes less than a minute. After a file is recalled the 'm' in the long listing will go away.

Any file may be placed in a subdirectory on any one of the data partitions. They are all 5 GB SCSI disk drives that act as cache space for the mass storage system. The /d1 partition is a little different in that it is a striped partition: four physical disks are accessed in parallel. This has advantages if your application is undertaking file I/O in very large chunks (on the order of several 100 Kbytes at a time); performance can be up to four times faster than to an un-striped partition. If your file I/O is in small chunks, then performance will actually be worse on the /d1 partition. Please choose your data location appropriately.

Files stored under DMF will have the same rules for expiration as files on the Amdahl's Hierarchical Storage Manager (HSM). Essentially, files that are 2 years old or older will be marked for deletion. The owner will be notified and will have an opportunity to update the access date and reset the 2-year expiration clock.

Cray Fortran and IEEE

As you probably already know, the Cray carries out calculations in 64-bit arithmetic by default. It also reads and writes binary files in this 64-bit format unless you specify otherwise. If you wish to read (or write) a file that is compatible with the 32-bit IEEE format that is common to most workstations then you need to request a format conversion with the Unicos assign(1) command or the Fortran assign(3F) function.

If you have a Fortran program, use a call to 'assign' in place of an open statement to assign a Fortran unit number to a file on disk. (Assign has many options for format conversion; refer to the man page for complete details.) Here is an example where IEEE file 'my.dat' is opened as Fortran unit '11'.

```
call assign('assign -F f77 -N ieee -a my.dat fort.11')
```

Then all reads or writes to unit 11 will treat file my.dat as an IEEE file.

Mike McCann (mccann@nps.navy.mil)

Vis Lab

Video Lab

Video Lab is an SGI hardware option that is installed in the Vis Lab's Iris 4D/120 VTX (zosma). It allows for input, blending, and output of analog video signals. You may use Video Lab in much the same way as you currently use the scan converter that is connected through alioth's monitor. The advantage of using Video Lab is that you can scan convert a portion of the screen, rather that the whole screen. This is especially useful when using textomatic to make titles, or if you have an application which works better in a smaller window.

To use Video Lab, start the vlipanel program (only on zosma):

```
/usr/video/vli/bin/vlipanel
```

When the window comes up you will need to change the Output: to "Betacam" from its initial setting of "Analog RGB". You can change the output area by clicking on "Set Output Area" and moving the mouse. To make classy-looking 3-D titles that you can spin and zoom, enter the textomatic command:

```
textomatic
```

The Video Lab's Betacam output is connected to the video rack's BNC patch panel at the 3 jacks labeled "zosma". You need to patch this output to the Monitor/Betacam input in order to record to the Betacam-SP recorder. (Feel free to see one of the Vis Lab staff members if you are uncomfortable changing cables.)

Sun Workstations

Most of the articles in this section appeared first in *ccmsgs*. You can read the latest news by typing, on a Computer Center Sun, *ccmsgs*.

Do Not Reboot Public Suns

Please do not reboot the Sun Workstations in In-141 (or Ro-222, or, probably, workstations in LRCs or departmental labs either) unless absolutely necessary. If you think a workstation in In-141 or Ro-222 needs to be rebooted, contact a Computer Center staff member. There are many workstations available, so you will probably be able to use another one.

Here's the reason for this policy: Many users run processes in the background, so you may cause a user to lose time and data if you just reboot a system. Please be considerate of other users.

Remember these workstations are NOT like PCs. Serious problems can be caused by turning them off and on.

Jody Schivley jschiv@nps.navy.mil

Splus 3.1 on Public Suns

Type

```
splus
```

on a public Sun to try it out. Splus is a large, complex product; you'll need to get a book describing its use. It has a nice graphical online help function. Once inside Splus, type

```
help.start(gui='motif')
```

to get a menu from which you can request help on any of Splus's hundreds of functions. Type

```
openlook()
```

to open a graphics window where the results of your Splus work will be displayed. Type

```
demo()
```

to get a menu of several demo programs. Last, and certainly not least: to exit Splus, type

```
q()
```

If you have questions, see Dennis Mar, *mar@nps.navy.mil*

Conferencing: ShowMe

ShowMe provides a shared "desktop conference board" that let users conduct on-line meetings where they can simultaneously view and annotate spreadsheets, drawings and other documents. Each

user has a separate, personalized on-screen marker which is visible to all participants and can be used to express ideas visually by pointing, gesturing and making annotations as one would in a face-to-face meeting.

Showme can be used to enhance phone conversations with illustrations and notes. You can get instant input instead of faxing, photocopying, express mailing or traveling.

There are no man pages for ShowMe, but online help is available. On a Computer Center Sun, type

```
showme
```

Hiram H.Cooke II cooke@nps.navy.mil

View mpeg Files

Mpeg files are little video clips. On a Computer Center Sun workstation, type

```
cd /local/music/mpeg
ls
mpeg_play filename
```

to view them. (*ls* shows you the names of available files.) You'll need to type the whole filename, including the *.mpeg* extension. For example:

```
mpeg_play zoom.mpg
```

Hiram H. Cooke II cooke@nps.navy.mil

ftptool for Sun Workstations

Ftptool is a window based interface to ftp. To try it out, at a unix prompt, type in:

```
ftptool
```

Why ftptool?

1. ftptool hides the interaction with ftp—you needn't know commands like 'get' and 'put' or the difference between 'get' and 'mget'.

2. ftptool lets you transfer directories (ftp doesn't).

For more info, type

```
man ftptool
```

Hiram H. Cooke II cooke@nps.navy.mil

emacs Installed on Suns

Epoch (an enhanced version of GNU emacs) is now available on the Computer Center's Sun workstations. Through epoch, text files can be edited, source code can be compiled and debugged, and electronic mail can be sent and received.

If epoch is used from the console of a Sun workstation in the Openwindows environment, you will get a windows version of epoch. If epoch is used from a terminal, such as via rlogin or dial in, it will execute the ascii version of emacs. The software is smart enough to use the proper version.

Just type in

```
epoch
```

at a unix prompt. For more info, type

```
man epoch
```

Jody Schivley jschiv@nps.navy.mil

NCAR Graphics for the Suns

NCAR Graphics Version 3.2 is now installed for use from the Sun workstations. NCAR Graphics is a collection of graphics libraries that supports the display of scientific data. A level 0a GKS package that generates an NCGM (NCAR Graphics Computer Graphics Metafile) is also included, along with NCGM translators and accompanying device drivers.

The path and environmental variables are all set for the use of NCAR Graphics. For more info, type

```
man ncargintro
```

Jody Schivley jschiv@nps.navy.mil

Sun Software Update

To get a listing of software currently available on Computer Center Sun workstations, simply type the command

```
software
```

You will get a listing in alphabetical order, with a one-line description. Most-recently installed software is also shown at the beginning.

Software for the SGI, HP, DEC, and Cray will be added to the list at a later date.

Hiram H.Cooke II cooke@nps.navy.mil

Matlab 4.1 on Sun, SGI, HP

Matlab version 4.1 has been installed on all Computer Center Sun and SGI machines. (The Center's HP workstations currently run version 4.0.) To start

it simply type

```
matlab
```

at the shell prompt. If you are logged in remotely be sure to have your X Window permissions set (See Vis Lab User's Guide, Chapter 2, Section 3.1) before starting.

You will then get the Matlab prompt '>>' at which you enter Matlab commands. (You may want to try the 'demo' and 'tour' commands to get a quick introduction to Matlab's capabilities.) The "toolboxes" of specialized routines we have purchased include:

SIMULINK
Control Toolbox
Identification Toolbox
Robust Toolbox
Signal Toolbox
Mu_Synthesis Toolbox

(The demo has sections for the Optimization and Neural Network toolboxes, but they are not included in our installation.)

This installation of Matlab will eventually be serving the whole School with 150 floating licenses. You may run Matlab on any supported platform (Sun, SGI, HP) on campus. The only limit is 150 simultaneous users. As Matlab is becoming popular for classroom instruction, we ask that during working hours (8-5, M-F) you restrict multiple matlab sessions, even though you may be running them on several different machines. Remember that for now we have only 150 available licenses.

Printing is supported in the Vis Lab and in In-141. To send monochrome postscript to a laser printer just use the Matlab 'print' command. If you are on an SGI your plot will print on the tiVis printer in the Vis Lab. If on a Center Sun it will print on the HP LaserJet in 141.

To print color images, first "print" the image (in this case a 2-D function plot) to a file using the '-pgif8' option:

```
x=sin([-pi:.1:pi])' * sin([-pi:.1:pi]);
mesh(x)
   or
pcolor(x)
print -dgif8 sinplot.gif
```

Then you can execute the im2tek(1) command to print the file:

```
!im2tek sinplot.gif
```

Note: '!' is Matlab's escape symbol; you may use it to execute any unix command from within Matlab.

Mike McCann mccann@nps.navy.mil

Installing Matlab

A special note to NPS Unix system administrators concerning Matlab: You may install Matlab on any of your local Unix systems (Sun, SGI, or HP). Instructions are available on the Computer Center Unix system in file /local/matlab/README.

You will need a Computer Center Unix account to access the necessary files. You may either visit Irma Bozardt in In-146 or e-mail her (isbozard@nps.navy.mil), with a copy to Hiram Cooke (cooke@nps.navy.mil), a message containing a copy of your passwd record as returned by

```
ypcat passwd | grep login_name
  or
grep login-name /etc/passwd
```

(The first above is for workstations running yppasswd, i.e., most networked Unix machines; the second is for standalone Unix setups.)

Mike McCann mccann@nps.navy.mil

Sun WordPerfect Printing

WP on the Sun workstations has been updated to include a driver for the HP4 printers. To change from the default which is an HP Laserjet III, do the following from within WordPerfect:

1. Click on 'FILE'
2. Click on 'SELECT PRINTER'
3. Select 'HP LaserJet 4' from the list
4. Click on 'OK'

This will make the HP LaserJet 4 your default print driver for WordPerfect.

Hiram H.Cooke II cooke@nps.navy.mil

Usenet

Usenet is the Unix-based news system. There are over 1300 discussion groups where people interested in a particular topic exchange views, info, etc. Each topic may have hundreds of recorded exchanges, with dozens of new items per day; you could easily spend every waking minute reading contributions from hundreds of thousands of peo-

ple worldwide.

To try it out, on the Computer Center Suns, type

```
trn
```

This is actually *threaded* readnews, which has numerous options designed to help you manage this flood of notes. The idea is to try to let you tell the system what topics you're interested in within the group you're reading, and let it automatically discard topics you aren't interested in.

Central to Usenet is a file called .newsrc, which contains a list of all the discussion groups. The first time you enter trn (or rn) the program checks to see if you have such a file in your home directory. If you don't, it copies the current version of the file to you, and asks you if you want to see the first of several articles in the first of many discussion groups. You may or may not want to look at the articles; the prompt reminds you that you can answer Yes, No, or Quit. trn also has the option +, allowing you to further refine what topics you follow. (Not all news groups are threaded; that is, not all of them allow this further refinement of subjects of interest.)

You can decide yes or no on the discussion groups it shows you; most people will prefer to type *q* to quit at this point. Then you can use vi or the Sun editor to edit the .newsrc file mentioned above. The groups have names that give a tree-like structure to the list of groups: there are subdivisions and subsubdivisions of topics. Each group name comes with a colon at the end. This means you haven't yet said whether you want to subscribe to (receive messages from) that group. Browse around among the group names. Most likely you will want to unsubscribe to all of them and then look around for the few you're interested in. To do this, in the Sun editor, click on Find, and then use Find and Replace to change all colons to ! (exclamation points). That tells trn you don't want to be asked about items from this group. If you find a group you want to subscribe to, remove the ! at the end of it.

This is, admittedly, a pretty brief introduction to Usenet. Remember, you can type *h* at any time within trn, and get reasonably useful (though brief) help. You can also contact Larry (address below) for more info.

Larry Frazier frazier@nps.navy.mil

Learning Resource Centers

The Learning Resource Center in Ingersoll 151 is to facilitate the preparation of theses, project reports, term papers, and class presentation material. Word Perfect, Word Perfect Presentations and Harvard Graphics are the most used software packages, with others available.

There is a Discover scanner to convert printed text to Word Perfect format which can then be incorporated into your document. It can also scan full page graphics in either PCX or TIFF format. A notebook of instructions is available next to the scanner.

If you want a private account in this LRC contact Joe Rogers in IN-104 or Lois Brunner in IN-111. Public accounts are also available; but, of course, you can not store your work between sessions on a public account.

Joe Rogers

From the LRC Corner

The best of wishes for a merry Christmas and a fruitful New Year to each of our Learning Resources Center clients. We also wish successful careers to our graduating students.

We have appreciated your enduring the "GREEN PAPER" that was supplied in each of the labs. The LRC staff thanks each of you for the help you have given your fellow students. This has allowed us to be more effective in helping others.

All students whether graduating or continuing have demonstrated their scholastic aptitudes and dedication to the goals of the Armed Forces of the United States and its allies.

Joe Rogers

Network News

Confirm a LISTSERV Subscription

LISTSERV discussion list subscriptions now require a confirmation message before you can be added to the membership. Most of the time this confirmation process is painless—you simply reply to an e-mail message with the single word "ok" as the text. The confirmation code is picked up from the subject line, matches the outstanding request, and you are confirmed as a registered member of the list.

However, there is sometimes conflict between the BITNET node name used in the subscribe command and the Internet address used in the e-mail reply. This conflict occurs when nodes are members of both BITNET and Internet, and mail is delivered via a gateway between the two wide-area networks. When this mis-match in addresses is detected by LISTSERV, the confirmation code is rejected and your subscription is not validated.

When you get an error message instead of a confirmation of registration, you must send the "ok" as an interactive message rather than as e-mail. In this way, the BITNET node name in the subscribe command and the BITNET node name in the ok command will always match. Be sure to include the confirmation code in the interactive message to confirm your subscription.

Caroline Miller miller@nps.navy.mil

Ping: Check Connections

The ping command sends an ICMP echo-request packet to a remote network host to check the status of the connection between the originating host and the foreign host. It's a good way to assure that a host is reachable, up and available. ping is available on either the Unix platforms or on VM.

You need the Fully Qualified Domain Name (FQDN) of the remote host, or its numeric IP address. If you don't know the hostname, telnet to nic.ddn.mil and use the WHOIS command to search the registered hosts database, or call a contact person and ask.

VM

Ping is usable only on the Internet, not BITNET. You must be DDNLINKed before you issue the command. To capture the output to a file, issue RECORD ON before you ping the first host, and RECORD OFF to close the record file. Example of use on VM:

```
ddnlink
record on
ping hostname1 (count 10
ping hostname2 (count 10
etc., until all hosts have been pinged
record off
```

Count tells how many echo requests are to be sent. Default is 1. For more info, after typing *ddnlink* as mentioned above, type

```
help ping
```

Unix Workstations

Unix platforms have no special command to enable network connectivity. Ping can be issued from the user prompt in any shell environment. For additional help with any of the following, type

```
man ping
```

Sun

To capture the output of the ping command on Sun workstations, give the command SCRIPT <filename> before you ping the first host; use CNTL/D to close the script file.

As above, *count* tells how many echo requests are to be sent. Default is 1.

Example of use:

```
script pinglog
ping hostname1 count 10
ping hostname2 count 10
etc., until all hosts have been pinged
CNTL/D
```

Captured results of the ping commands are in file pinglog.

SGI

Other Unix platforms provide ping capability as

well. Syntax is basically the same on SGI workstations as on Sun workstations, except that SGI has more options (type "man ping" while logged (or rlogged) on to an SGI). In particular, the option *-c count* directs ping to stop after *count* number of sends. Example of use:

```
ping -c 12 hostname1 > pinglog
```

The host will be pinged 12 times, and the results will be saved in a file called pinglog. Results of the ping command will be piped into the named file rather than displayed on the screen.

HP

ping is usable from Hewlett Packard Unix workstations as well. You may need to provide the full pathname for the command, if your user account doesn't set that up for you. /etc/ping should do the trick. Example of use:

```
ping hostname 10
```

The allowable range is from 1 to (2**31 -l), decimal. NOTE: By default, HP's ping sends until interrupted. If you don't include a number, ping will continue to send packets until you interrupt it.

Caroline Miller miller@nps.navy.mil

Mainframe

Protecting MVS Files with RACF

RACF allows users to protect their MVS data sets by limiting access or write-protecting. The naming convention for MVS user data sets is: MSS.USERID: RACF User IDs are: Sxxxx (Students), Cxxxx (Computer Center Staff), Fxxxx (Faculty), Xxxxx (External).

That is, all user MVS data sets MUST begin with MSS followed by the RACF User ID. RACF enforces the rule that data set qualifiers can be no longer than eight characters.

If you wish to protect your MVS data sets, there are several levels of authorization that can be implemented with Universal Access Authority (UACC) parameter. The UACC can be one of the following:

UACC(NONE): Does not allow users to access data sets.

UACC(READ): Allows users to Read, Copy & Print data sets

UACC(UPDATE): Allows users to Read, Copy, Print, and Write to data sets

UACC=(ALTER): Allows users to Create, Read, Copy, Print, Write, Delete, Scratch, Rename, and Move data sets

Access lists specify exceptions to the UACC. Those users who need access at a level different from the UACC can be named in an access list. Using the RACF permit command, you can specify who can access your data sets and at what level.

The ADDSD command is used to RACF-protect data sets with generic profiles. If you wish to protect data sets, you must define a generic profile to RACF and your RACF User ID must match the second level qualifier of the data set names; that is MSS.S1234. Use the following Job Control Language (JCL) to protect all data sets beginning with MSS.S1234 and submit the job to MVS.

```
//ALYCE JOB USER=S1234,CLASS=A,PASSWORD=SAGI
//*
//*  ADD DATASET PROFILE TO RACF
//*
//LIST EXEC PGM=IKJEFT01
//SYSPRINT DD DUMMYP
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
 ADDSD 'MSS.S1234.**' UACC(NONE)
//
```

The PERMIT command is used to maintain lists of users or groups authorized to access data sets. If you wish to permit users to access your data sets, you must specify their RACF User ID and the level of access. Use the following JCL to permit access to your data sets and submit the job to MVS.

```
//ALYCE JOB USER=S1234,CLASS=A,PASSWORD=SAGI
//*
//* PERMIT USERID S1258 TO ACCESS PROFILE
//* DATASET 'MSS.S1234.**' AT THE READ LEVEL
//*
//LIST EXEC PGM=IKJEFT01
//SYSPRINT DD DUMMY
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
 PERMIT 'MSS.S1234.**' ID(S1234) ACCESS(ALTER)
 PERMIT 'MSS.S1234.**' ID(S1258) ACCESS(READ)
//
```

The permit command is also used to delete a User ID you identified on an access list for particular data sets, to add more than one User ID, and to

give all User IDs read access. For example:

```
PERMIT 'MSS.S1234.**' ID(S1258) ACCESS(DELETE)
PERMIT 'MSS.S1234.**' ID(S1258 S1529 S2035) ACCESS(READ)
PERMIT 'MSS.S1234.**' ID(*) ACCESS(READ)
```

NOTE: You must also give yourself permission to access your own datasets:

```
PERMIT 'MSS.S1234.**' ID(S1234) ACCESS(ALTER)
```

The LISTDSD command displays information contained in your data set profile. If you would like to find out which data sets your profile protects, use the following (JCL) and submit the job to MVS.

```
//ALYCE JOB USER=S1234,CLASS=A,PASSWORD=SAGI
//*
//*   Display the contents of data set profile
//*   'MSS.S1234.**'
//*
//LIST EXEC PGM=IKJEFT01
//SYSPRINT DD DUMMY
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
 LISTDSD DATASET('MSS.S1234.**') DSNS NORACF
//
```

To list who has access and at what level, use the AUTHUSER parameter. The LISTDSD command will look like this:

```
 LISTDSD DATASET('MSS.S1234.**') AUTHUSER
```

NOTE: MSS data set owners who want RACF services for their data sets must sign up with Alyce Austin (Ext. 2042, In-110) or Ruth Roy (Ext. 2796, In-109).

Alyce Austin, 0030p

Expiring Data Sets

Disk data sets on the MVS batch system that have not been used in the past two years will be deleted on 10 January 1993. Instead of limiting the number of data sets or space which users may have on the batch system, the limit is only *two years from last use* for each data set.

Each quarter data sets which have not been used in two years are deleted. A listing of the data sets which will be subject to deletion is in the Consulting Office, In-146. MVSHELP, option 9, "Expiring MVS Data Sets", will give you a list of your own data sets which are expiring soon. Each user of MVS data sets should refer to one of these to ensure that no valuable data set is deleted. This responsibility must be in the hands of the owner because the Computer Center has no way of knowing what data still has value.

The Computer Center staff will assist users with data sets which they wish to archive. Responsibility for the archival and retention of the resulting tape must belong to the individual, but a procedure has been set up and tapes will be provided by the Computer Center. A handout describing the straight-forward process is available from Linda Mauck, In-105. If you have any questions, please contact her at her office or by calling 656-2651.

Linda Mauck 0072p

cc.nps.navy.mil Alias Gone

For the past year, CC.NPS.NAVY.MIL has been accepted as an alias for the Internet hostname of the mainframe. There has been ample time for everyone to notify correspondents of the name change, so the alias is being withdrawn; CC.NPS.NAVY.MIL is no longer supported as an alternate hostname for the Amdahl. The only valid hostname is VM1.CC.NPS.NAVY.MIL.

Knox Library

The Peacock is Coming

Helen Davis, of the Computer Center, is testing a Gopher server for our campus. NPS's Gopher, Peacock, is under development with a target date for hatching in mid-January. Watch for announcements of its arrival on the TACK Board on Banyan Vines, mainframe NEWS, Sun workstations' online notes (ccmsgs), and in the Quarterdeck.

With Peacock, a user will have access to BOSUN, the Library's online catalog; Computer Center documentation; files of NPS course information from the Registrar's Office; and other campus-created information tools for general use. Through Peacock, the user can also be pointed to such bibliographic tools as InfoSlug at UCSanta Cruz and the University of California's MELVYL library catalog. NPS departments wishing to add information to Peacock may contact Maxine Reneker, Director, Dudley Knox Library, ext 2341, mreneker@nps.navy.mil or Helen Davis, ext 2446, davis@nps.navy.mil.

Maxine Reneker mreneker@nps.navy.mil

The Electronic Librarian

For some months now users have been able to access the Library's On-line Catalog via the BOSUN system from any mainframe-attached IBM 327X terminal or PC emulating the IBM 327X, in additon to the dedicated terminals in the Library. Now, that access has been extended to any network-attached PC or workstation which is equipped with TCP/IP and tn3270 emulation.

To access from the public Sun workstations using OpenConnect's tn3270/79 Emulation Software: at the Command prompt, enter

```
tn3270snal
```

snal is a sufficient address for the public Suns. The full address (snal.cc.nps. navy.mil) may be needed by some versions of tn3270. The screen will show NAVAL POSTGRADUATE SCHOOL-01. Type

```
bosun
```

Then clear the screen, and type

```
luxi
```

This gives you the BO5UN request menu. When finished, clear the screen and type

```
cesf logoff
```

(returns to screen "NAVAL POSTGRADUATE SCHOOL-01"). To return to your machine's command line, issue your "tn3270 termination" command. For the public Suns this command is EscXX.

Access from Dial-In Devices.

The same access is possible from remote PCs or workstations running SLIP (Serial Line Interface Protocol) and tn3270 emulation. Dial-up access is available through the Center's Network Terminal Server (phone number 656-2709).

Mac users can use InterCon's TCP/Connect II software which is distributed free by the Mac Special Interest Group (Chairman: Andy Melton, 373-0695, SMC 2256). Faculty members can obtain copies from Roy Romo (In-133, ext. 2004).

PC users will have to acquire SLIP and tn3270 support. The Center is investigating possible acquisition of a site license for such a package and being able to distribute copies free to users.

The BOSUN system is basically an IBM 327X, full-screen application. Nevertheless the Center is investigating support for some popular communications packages, such as Kermit, which emulate VT100s, etc.

For assistance, or if you are experiencing problems, contact Doug Gould, Systems Librarian, at x3342, or x3348. If you wish to receive an instructional brochure, send an e-mail message to dgould@nps.navy.mil.

BOSUN lets you check the status of a book online—whether it is available on the shelf. But this will only work reliably if all books checked out of the Library are entered into the system. You can help make this work by returning all books you have checked out under the old manual system, so they may be entered into BOSUN.

Doug Williams williams@nps.navy.mil
Doug Gould dgould@nps.navy.mil

Personnel

Congratulations to Eldor and Jocelyn Magat, on the birth of their daughter, Kristianne, on November 22! Eldor is a computer operator at the Center.

Hazards of Computing...

One of our users got stuck in a program and couldn't get out. He searched and searched through the manual and could find nothing which told him how to get out of the program. Nothing: quit, stop, bye, log, would get him out of the program. He finally got so frustrated he kicked the manual

... and broke his toe.

He wants to know if Workers' Comp covers this...

Computer Center Mainframes

The Center operates (1) An Amdahl 5995-700A (384 MB processor storage, 1 GB expanded storage) loosely coupled with an IBM 4381 Model Q13 (24 MB). Interactive computing is provided under VM/XA CMS, batch processing under MVS/ESA with JES3 networking. (2) A Cray Y-MP/EL 98 (8 cpus, 2 GB memory, Unicos).

Hours of Operation

VM & MVS	24 hrs/day, 7 days/wk	
	656-2713:statusrecording	
NOTIS	M.-Th.	0700-2300
(Library)	Fr., Sa.	0700-1800
	Sunday	0700-2200
Consulting	(In-146,ext 3429)	
Mon-Thu	0800-1130	1315-1545
Fri	0900-1130	1315-1545
Dial-up	656-2709 up to 9600 bps	
TAC Access	647-8422	

Terminal Clusters (Open)

In-141	17	Sun SPARC 10/41
	5	3472G Graphics/APL
	2	3192-2 Graphics/APL
In-364E	14	3192 Graphics/APL
Ro-222	15	Sun Sparc 10/41 wkstn.
Sp-311	11	3278-2 (4 APL), 2 Tek 618
Ha-126	3	3278-2 (1 APL), 1 Tek 618
Ha-201C	4	3278-2 (1 APL), 1 Tek 618
Bldg223	11	3178-2 (1 APL)
Knox Library (Basement)	3	3278-2

Printers (Mainframe)

In-140 IBM 3800-3 Laser (215 ppm)
IBM 3262 Impact (650 lpm)

In-141 Tek 4693D Color Prntr/Plotter
Shinko CHC-743MV Clr Prntr

In-364 IBM 3268 Impact (APL)

Sp-311 IBM 3203 Impact (1000 lpm)

Ro-222, Ha-201B, Bu-100, Bldg 223
IBM 3262 Impact (650 lpm)

Computer Cen. VisLab, In-148

4 Silicon Graphics: 1 380 VGX, 2 4G/35 TG, 1 Indigo²Extreme, 1 Mac Quadra 700, 1 HP 730, 1 DECstation 5000, 1 Sun SPARC 10/41

Learning Resource Centers

Hours of Operation

Open: M-F 830-1630
(Other access by arrangement)

GL-128 20 Mac Quadra 700 (Sys 7)
6 PC 486/DX 50

GL-203 33 PC 486/DX 33

GL-318 19 HP 730
1 PC 486/DX 33

In-151 11 PC 386 (25/33)
1 Discover Scanner (PC)
2 HP LaserJet IIIsi
2 Xerox 6085 workstation
1 Xerox image scanner
1 Xerox laser printer

In-371 6 PC 486/DX 33
4 PC 386/25

Ro-262 15 PC 386/20
2 Z-248 (286)

Points of Contact

	Room	Ext.
Dean, Computer & Information Services (Acting)		
Toke Jayachandran	He-D139	2392
ADP Security		
Jeff Franklin	He-D139	2469
Knox Library		
Maxine Reneker	Kn-105	2341
Computer Science micro & wkstns		
Al Wong	Sp-525A	2009
Admin. Science micro labs		
Norm Schneidewind	In-311	2719
ECE micros & workstations		
Bob Limes	Sp-301	3216
Computer Users Council (CUC)		
Mike McCann, Comp. Center		2752
Dennis Mar, Secretary		2672

MIS Points of Contact

Network Services
Codes 00x, 01, 03x, 07 & Depts.
Lonna Sherwin 2794
Codes 05, 21, 22, DRMI
Lyle Munn 2794
Codes 04, 06, 08 & Currics.
René Lightcap 2195
Codes 42, 43 Joe Lopiccolo 2994

Computer Center Points of Contact

	Room	Ext.
Director		
Prof. Douglas Williams	In-129	2572
Administrative Assistant		
Mandy Drury	In-130	2574
Manager, Systems Support		
David F. Norman	In-118	2641
Manager, User Services (Acting)		
Dennis Mar	In-133	2672
Manager, Operations		
Roy Romo	In-132	2004
Manager, Visualization Lab		
Mike McCann	In-102B	2752
Manager, LRCs & Center Micros		
Kathryn Strutynski	GL-375	2696
Editor, Bulletin		
Larry Frazier	In-113	2671
User Registration and Accounting		
Irma Bozardt	In-147	2731
Ruth Roy, Manager	In-109	2796
Programming Cnsultnt.	In-146	3429
Shift Supervisor, Opns	In-140	2721
System Status (recorded msg.)		2713

NPS Computer Club

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Mac Chairman: Andy Melton
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Mac Librarian: Curtis Plunk
647-8829 NPSCurtis@aol.com

OS/2 Chairman: Mike Schievelbien
schievel@cs.nps.navy.mil

BBS: Closet Gouge I & II: 300/1200/2400 bps; 8-N-1; 655-8785/655-8787

Distribution: List 3, plus: 250-B3, 6-B4, 20-B13, 2-B15, B18, 12-F2, 10-F3, 9-F4, 1-F7, 1-F14, 5-FNOC Computer.